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Bureau of Agricultural Engineering

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: Under the revised regulations governing sick leave it is :
: now permissible to take a minimum of one-half day of sick leave :
: instead of a whole day as heretofore, and the applicant's signed :
: statement may be accepted without oath for periods of two days :
: or less up to a total of twelve days in the leave year. Notifi- :
: cation of absence on account of sickness should be given as soon :
: as possible on the first day of absence and the application for :
: sick leave must be filed within two days after return to duty. :
: Slight illness or absence for the purpose of medical examina- :
: tion will not be regarded as sufficient reason for allowance of :
: sick leave. Absence for the purpose of being treated by a :
: dentist or oculist in his office is not allowable as sick leave. :
: The fifteen days sick leave for field employees remains the :
: same.
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In connection with his tests on the flow of water around bends D. L. Yarnell found that inserting an ordinary type of Pitot tube different distances into the pipe changed the cross-sectional area of the pipe sufficiently to materially affect the accuracy of the results. In order to correct this condition extensions were built on the Pitot tubes that would insure a constant cross-sectional area regardless of the position of the tube.

W. D. Ellison is in the Washington office assisting with the computations being made in connection with report on the rehabilitation of the Little River Drainage District in southeastern Missouri.

B. O. Childs reports that a 7-inch rain occurred at Houma, La., on March 12, commencing about 3 a.m. The drainage pump was started shortly after the rain began and operated continuously except for 6 hours at night and by sundown the following day the fields were cleared of water.

B.S. Clayton has obtained levels to obtain records of subsidence on several tracts of muck. One line showed a subsidence of from 1.03 to 1.35 feet since 1921. Results on three other lines showed averages of 1.86 feet to 2.11 feet subsidence between 1916 and 1933, the subsidence ranging from 44 per cent to 51 per cent of the original depths of the muck.

C. E. Ramser left Guthrie on February 28 for an inspection trip of the erosion stations at Zanesville, Ohio; La Crosse, Wis., Bethany, Mo., and Clarinda, Iowa. Considerable time was spent at Zanesville supervising the work now in progress under the immediate direction of F. E. Hardisty. Mr. Ramser spent March 11 to 13 at Washington conferring with Bureau officials.

A comparison of terraced and unterraced areas on the Guthrie project for the year 1932, as reported by H. S. Riesbol, showed that the unterraced area lost 88.06 tons of soil per acre and 30.8 per cent of the total rainfall as run-off. In the same year level terraced land of similar slope and cropped in an identical manner lost 4.06 tons of soil per acre and 23.3 per cent of the year's rainfall as run-off.

In the two years 1931 and 1932 a terrace at the Tyler station with a constant grade of six inches per 100 feet lost 17.72 tons of soil per acre as compared with 6.82 tons of soil per acre from a terrace with a variable grade of 0 to 3 inches per 100 feet, according to R. W. Baird. These terraces are on the same ground slope, are cropped in an identical manner and are each 700 feet long with a vertical interval of 4 feet.

A. T. Holman was in Lewisburg, Tenn., from March 2 to 7, inclusive, locating and constructing terraces and studying soils, topography, vegetation and erosion on the 500-acre Federal dairy farm. From this work an erosion-control program will be formulated for the farm.

On March 4 an illustrated talk on soil erosion investigations was delivered before the Washington State College Student Branch of the American Society of Civil Engineers by Paul C. McGrew.

Revision of report by Carl Rohwer on Rating and Use of Current Meters has been completed. This report shows the characteristics of various types of current meters when rated under different conditions at both tangent and rotary stations, and also the accuracy with which these meters, using different methods of measurement under various conditions, measure water as shown by comparison with Francis weir measurements. Models of all the standard makes of meters were investigated, including both cup and propeller types. In addition, observations were made on meters built especially for the tests.

L.M. Winsor outlined a proposed method of restoring Santa Clara River, near St. George, Utah, to its normal channel, and of holding it there. During the past year a heavy flood caused immense loss of valuable lands along this stream. The plan of control calls for straightening of channel by cutting through sand bars, and installation of diversion dams; also installation of breakers or baffles to prevent further erosion under high banks. During the month the plan has been put into effect and about 75 per cent of the work completed. Mr. Winsor also assisted in revising an irrigation bill introduced in the Utah legislature, providing for changes in irrigation law; and aided in preparing a bill providing for flood control districts.

Soil sampling on the Medford, Oregon, experimental farm will be confined mostly to the upper four feet during the coming season, since it is evident from data previously gathered, that on these soils up to six feet in depth approximately 85 per cent of the total root mass is located in the upper four feet. Six hundred feet of open ditch was excavated for the wood stave pipe to be laid to the new irrigation plots on this tract. Forms and metal partitions were constructed for the new measuring device.

A detail survey for an inverted siphon pipe line as an improvement to the irrigation set-up at the Mullen Home for Boys near Fort Logan, Colo. was made by R. L. Parshall and Mr. Code.

A drainage area map of Texas was prepared by F. J. Fricke for use in determining soil types in the various watersheds from which our sampling stations receive their silt supply.

Venturi flumes and manometers for new experiments at our Medford, Oregon, experiment farm are being constructed at the Oregon Experiment Station shops under the supervision of M. R. Lewis, and will probably be calibrated at the laboratory there.

Wells A. Hutchins and Paul A. Ewing are at Scottsbluff, Nebr., making an economic survey of the Farmers' Irrigation District.

The earthquake in southern California March 10-11 injured none of our employees and the only damage to Bureau property was the overturning of book stacks in the Los Angeles office. H. F. Blaney was in the office at the time.

The Utah Legislature, in appreciation of our flood control investigations, made a special appropriation to the State Land Board that this work might be continued the next two years as a cooperative undertaking.

The prospects are that the irrigation water supply will be below normal during the coming season and in a few sections the situation is somewhat serious.

The redesigned combination corn picker and stalk chopper was tested at the Toledo farm and gave very satisfactory results, although the condition of the corn after wintering made the operation very difficult.

Thayer Cleaver returned to Urbana, Ill., from Toledo March 8, to continue the cooperative work with the University of Illinois in corn borer control.

Tests will be conducted at St. Paul, Minn. by L. G. Schoenleber on the efficiency of grain cleaning machinery with particular regard to the removal of smut balls.

O. K. Hedden and E. C. Hansen are conducting some further burning tests at Troy, Kansas, to determine the efficiency of burning as a control measure for apple curculio. This work is a continuation of the tests carried on at Troy last fall.

R. M. Merrill visited the Washington office March 14 and 15 to confer on corn borer matters. He also visited Frank Irons and V. D. Young at the Trenton station before returning to Toledo.

In connection with tests being conducted by W. M. Hurst and W. R. Humphries, it was found that cereal grain exposed to air at a temperature of 60° F. and 85 per cent relative humidity at the Arlington Farm laboratory absorbed sufficient moisture from the atmosphere to render it unsafe for storage except under favorable storage conditions.

Fertilizers were applied for the cooperative placement tests with potatoes at Onley, Virginia, on March 15, by A. L. Sharp and W. H. Redit. A special experimental machine developed in the Division of Mechanical Equipment was used. Results at the Onley farm of the Virginia Truck Experiment Station last year indicated that fertilizer placed in a band at each side of the seed was superior to the local practice of mixing the fertilizer with the soil.

.....The field experiments with the placement of fertilizer for cotton and tobacco will be started at Tifton, Ga., the latter part of March. The cotton work will be continued this year in eight principal cotton States. The tobacco work is a new project and will be limited to four Southeastern States. Special equipment has been developed for these studies.

The Bureau's variable depth seed planter developed by John W. Randolph has been adapted to four types of cotton planters. A two-row variable depth cotton planter as an attachment to a one-row cultivator was completed.

In his 1932 annual report, Claude K. Shedd summarized some of the results as follows:

The spike tooth harrow, spring tooth field cultivator, and disk harrow were the most useful implements for cultivating plowed ground up to the time of planting except that the rotary hoe was the most convenient and useful implement to attach to the plow to cultivate the ground immediately after plowing.

For cultivation of corn before it was large enough to cultivate with the four-row tractor cultivator the best weed control was secured with the four-row tractor cultivator with rotary weeder attachment.

In a comparison of three methods of planting and cultivating corn the labor requirements for preparing the seedbed, planting and cultivating were as follows: Check planted corn, 4.0; drill planted corn, 3.6; and listed corn, 2.6 man hours per acre. With corn check planted 21 by 21 inches the labor requirement for the above mentioned operations was 5.5 man-hours per acre.

Corn picker tests indicated three men with a picker harvested, transported and cribbed corn at the rate of about 100 bushels per hour. It would require 12 to 15 ordinary men picking by hand to harvest and crib at the same rate.

The following experimental machines were built: (1) a 21-inch check corn planter, (2) a one-man corn picker wagon hitch, (3) a corn picker.

The Division of Plans and Service has made a tentative selection of 289 farm building plans from the various States and this Bureau for inclusion in the Plan Exchange Service referred to in the January News Letter. Mimeographed copies have been sent to the Agricultural Engineering Departments and Extension Services of the State Agricultural Colleges in order that each interested agency may select designs adaptable to its own building plan service. If the response is sufficient to warrant further procedure, the original tracings of the selected designs will be borrowed from the originating agencies from which vandyke negatives will be prepared and filed in Washington. Vandyke positives, from which blueprints can be obtained, will then be supplied to cooperating agencies upon request. The response from the colleges has so far been very encouraging.

The annual conference of the Advisory Committee of College Division of the American Society of Agricultural Engineers was held in Washington March 5, 6, and 7.

The construction of the Bureau exhibits for the Century of Progress Exposition is progressing. It is expected that the models will be completed in time for the opening of the exposition.

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: In order that adjustments may be made in payrolls on account of :
: furlough leave, slips for leave up to April 1 must be sent to the :
: Washington Office immediately. :
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